













fig1



200

201

### List of Projects

	Project Title	Date	RFQ
	TEST1	01.21.2001	 rfq
TEST1			
	TEST2	01.26.2001	 rfq
TEST2			
	TEST3	01.27.2001	 rfq
test3			
	TEST4	01.30.2001	
TEST4			
	Test5	01.31.2001	
Test5			
	giacziella	01.31.2001	
testing			
	test2af	01.31.2001	
id			

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open

rename

delete

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205

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fig2



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## Configurations

Project Title: TEST1

310

304

305

306

301

304

Name	Date	Train Components	View	View	RFQ
x	01/11/2001	EHASYNCR787DKW + GB + 2BCL1006	chk	dsh	
LM2500	01/11/2001	LM2500 + GB + BCL104/C	chk	dsh	
motore elettrico	01/11/2001	EHASYNCR481DKW + GB + BCL104	chk	dsh	
PGT10	01/11/2001	PGT10 + GB + BCL1501	chk	dsh	
Test	01/11/2001	GE16 + GB + BCL1506	chk	dsh	
Config1	01/11/2001	FRAMESC + GB + BCL104/A + BCL155/B	chk	dsh	
4	01/11/2001	LM2500 + GB + BCL104/A + BCL155/B	chk	dsh	
as+12	01/11/2001	LM2500 + GB + BCL104/A + BCL155/B	chk	dsh	
12	01/11/2001	FRAMESD + GB + BCL104/B + BCL155/C	chk	dsh	
PAOLO	01/11/2001	LM2500 + GB + BCL1507/A	chk	dsh	
68	01/11/2001	LM2500 + GB + BCL1502/N	chk	dsh	
Proge	02/01/2001	LM2500 + GB + BCL104/A + BCL155/B	chk	dsh	
1146	02/01/2001	EHASYNCR1050KW + GB + BCL155 + 2BCL1257	chk	dsh	

302

open

rename

delete

307

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fig3



## Configuration Results

Project Title TEST1  
Configuration Name: motore elettrico

402

404 { EMASYN4810KW + GB + BCL404

Discharge Pressure:	.24	bar-abs
Discharge Temperature:	70.8	deg C
Number of Stages:	1	
Actual Discharge Flow:	7818	m3/h
Power Margin:	14.94	%
Absorbed Power at Driver Shaft:	4185	KW

403

Calculation results are preliminary and must be confirmed by Nuovo Pignone Technical Office

- 407
- More Data 403
  - Layout Composition 409
  - RFQ
  - View List of Configurations 410

A RFQ for this configuration has already been sent. In order to avoid misunderstandings it is necessary to modify or rename the configuration before to send another RFQ.

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fig4





### Configuration Results

Project Title TEST1  
Configuration Name: motore elettrico

504: EMASYN4810KW + GB + BCL404

505 {

Discharge Pressure:	24	bar-abs
Discharge Temperature:	70.8	deg C
Number of Stages:	1	
Actual Discharge Flow:	7818	m3/h
Power Margin:	14.94	%
Absorbed Power at Driver Shaft:	4185	kw

} 503

Calculation results are preliminary and must be confirmed by Nuovo Pignone Technical Office

508  
More Data

Layout Composition - 509

RFQ - 511

View List of Configurations - 510

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601

### New Configuration

Plant General data

Unit System  Compression Service

602

---

Environment Conditions

Environmental Design Pressure\*  m

Design Temperature\*  deg C Relative Humidity\*  %

603

---

Driver Specifications

Driver Type  Model

Gas Turbine Data

Electrical Frequency  Hz

Fuel Type

Compressor Speed  rpm

604

---

Next - 605

Ready

fig6



## New Configuration

### Compression Data

Gas State Equation  Nace Application

706 ☐ Process Gas \*

Handled Flow \*

Suction Pressure \*  Suction Temperature \*   
Discharge Pressure \*  Max Temperature

### Compressor Options

Stage Number

#### Casing Type

Horizontally Split   
Back-To-Back   
Double Flow   
Max Peripheral Speed of Impellers

#### Stage Compression Ratios as Percentage of 1st Stage

2° Stage    
3° Stage    
4° Stage

#### Casing Model and Size

1° Casing Model	<input type="text" value="Optimized"/>	2° Casing Model	<input type="text" value="Optimized"/>	3° Casing Model	<input type="text" value="Optimized"/>
1° Casing Size	<input type="text" value="Optimized"/>	2° Casing Size	<input type="text" value="Optimized"/>	3° Casing Size	<input type="text" value="Optimized"/>

### Interstage Data

Gas Cooler Discharge Temperature   Max Stage Suction Temperature

#### Interstage Pressure Drop

Between 1° & 2° Stages    
Between 2° & 3° Stages    
Between 3° & 4° Stages

#### Interstage Discharge Pressures

1° Stage    
2° Stage    
3° Stage

705

FIG 7



## Fuel Gas Composition

### Water Content

Reference humidity ☐ %  
Reference temperature ☐ deg C  
Reference pressure ☐ bar-abs  
Water ☐ %

Please fill the above field to insert the water value. If you want insert the relative humidity of gas composition use the "relative humidity" box, "reference pressure" and "reference temperature". If you want insert the water quantity of gas composition fill the "water" box. If you don't want insert water value leave all field blank.

### Gas Composition

Type of Measures

Component name	Quantity(%) *	Component name	Quantity(%) *
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>
<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>	<input type="text" value="-&gt;Select"/>	<input type="text" value="00"/>

 ~ 804

fig8



900

~901

### Process Gas Composition

#### Water Content

Reference humidity ☐ %  
 Reference temperature ☐ deg C  
 Reference pressure ☐ bar-abs  
 Water ☐ %

902

Please fill the above field to insert the water value. If you want insert the relative humidity of gas composition use the "reference humidity" box. "reference pressure" and "reference temperature". If you want insert the water quantity of gas composition fill the "water" box. If you don't want insert water value leave all field blank.

### Gas Composition

Type of Measures

Component name	Quantity(%) *	Component name	Quantity(%) *
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>
<input type="text" value="Select"/>	<input type="text" value="00"/>	<input type="text" value="Select"/>	<input type="text" value="00"/>

903

904

fig 9



1000

~1001

### Configuration Results

PGT5 + GB + BCL801

1002

Discharge Pressure:	8.00	bar-abs
Discharge Temperature:	25.87	deg C
Number of Stages:	1	
Actual Discharge Flow:	34359.2	m3/h
Power Margin:	15.21	%
Absorbed Power at Driver Shaft:	1363.	kw

1003

Calculation results are preliminary and must be confirmed by Nuovo Pignone Technical Office

[save](#) [modify](#)

[More Data](#) [Layout Composition](#) [View List of Configurations](#)

1006 1007 1008 1009

fig 10



1100

- 1101

### More Data

#### Driver Data

Description	Overall	
Discharge Pressure:	8.00	bar-abs
Driver Model:	PGT5	
Actual Discharge Flow:	34359.2	m3/h
Absorbed Power at Driver Shaft:	1363.	kw
Power Margin:	15.21	%
Electrical Frequency:	50	hz

> 1103

#### Compression Data

Description	Stage 1	Stage 2	Stage 3	Stage 4	
Molecular Weight:	16.043				1/mole
Handled Flow: Mass Flow	50				kg/s
Suction Pressure:	7.00				bar-abs
Suction Temperature:	15.00				deg C
Suction Actual Flow:	37843.5				m3/h
Discharge Pressure:	8.00				bar-abs
Discharge Temperature:	25.87				deg C
Discharge Actual Flow:	34359.2				m3/h
Impeller Number:	1				
Speed:	4024.				rpm
Politropic Efficiency:	84.46				%

1104

	Model	Type	Size	Impeller Number:	Rating
Compressor Casing 1	BCL801	BCL	800	1	600
Compressor Casing 2					
Compressor Casing 3					

> 1105

back - 1106





1200

### Save Project

☐ Save in existing project

TEST1

☐ Save in a new project

Project Title:

Project Description:

confirm

cancel

1204

1202

1203

Back

fig 12



1300

GE Power Systems  
Oil & Gas  
Nuovo Pignone - Upstream

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Go to Designers List of Products New Products New RFC&Q Latest Releases

1301

### New RFC&Q

#### Plant General data

Unit System  Compression Service

1302

#### Environment Conditions

Environmental Design Pressure\*  m

Design Temperature\*  deg C Relative Humidity\*  %

1303

#### Driver Specifications

Driver Type  Model

Gas Turbine Data

Fuel Type

Electrical Frequency  Hz

Compressor Speed  rpm

1304

next 1306

Back

fig 13



## New RFC&Q

### Compression Data

Gas State Equation  Nace Application

Stage Number

	Optimized	1st	2nd	3rd	4th	
Handled Flow <input type="text" value="Mass Flow"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	kg/s
Suction Pressure *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bar-abs
Suction Temperature *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	deg C
Discharge Pressure *	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bar-abs

Process Gas \*  1

Max Temperature \*  deg C

### Compressor Options

#### Casing Type

Horizontally Split

Back-To-Back

Double Flow

Max Peripheral Speed of Impellers \*  m/s

### Interstage Data

Gas Cooler Discharge Temperature \*  deg C Max Stage Suction Temperature \*  deg C

#### Interstage Pressure Drop

Between 1° & 2° Stages *	<input type="text" value="25"/>	<input type="text" value=""/>
Between 2° & 3° Stages *	<input type="text" value="25"/>	<input type="text" value=""/>
Between 3° & 4° Stages *	<input type="text" value="25"/>	<input type="text" value=""/>

1406

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fig 14





### RFC&Q Summary Data

1502

#### General Data

Compression Service	Not Specified
Driver Type:	Optimized
Driver Model:	OGT
Direct Coupling:	Not

1503

#### Compression Data

Description	Optimized	Stage 1	Stage 2	Stage 3	Stage 4	
Handled Flow: Mass Flow	1					kg/s
Suction Pressure:	1					bar-abs
Suction Temperature:	1					deg C
Discharge Pressure:	1					bar-abs

1504

salvo  
1505

machily  
1506



fig 15



1600

~1601

### RFC&Q Summary Data

Project Title: TEST1  
 RFC&Q Name: gra

} 1602

#### General Data

Compression Service	Not Specified
Driver Type:	Optimized
Driver Model:	OGT
Direct Coupling:	Not

} 1603

#### Compression Data

Description	Optimized	Stage 1	Stage 2	Stage 3	Stage 4	
Handled Flow: Mass Flow	1					kg/s
Suction Pressure:	1					bar-abs
Suction Temperature:	1					deg C
Discharge Pressure:	1					bar-abs

} 1604

modify

~1606

RFQ

List Of Verifications

~1607

View List of RFC&Q

~1608

1605

fig 16



RFC&Q

Project Title: TEST1

Back to Configurations List

Name	Date	View	View	RFQ
2	01.26.2001	chk	dsh	rfq 01.27.2001
prava ver	01.25.2001	chk	dsh	rfq 01.29.2001
9	01.29.2001	chk	dsh	rfq 01.30.2001
prava	01.30.2001	chk	dsh	rfq 01.30.2001
prava ver send	01.30.2001	chk	dsh	rfq 01.30.2001
prava9	01.30.2001	chk	dsh	rfq 01.30.2001
Prava 1	01.31.2001	chk	dsh	rfq 01.31.2001
RT	01.31.2001	chk	dsh	

open restore delete

1708 1709 1710

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fig 17



1800

~1801

### RFC&Q Summary Data

Project Title: TEST1  
 RFC&Q Name: gra

} 1802

#### General Data

Compression Service	Not Specified
Driver Type:	Optimized
Driver Model:	OGT
Direct Coupling:	Not

} 1803

#### Compression Data

Description	Optimized	Stage 1	Stage 2	Stage 3	Stage 4	
Handled Flow: Mass Flow	1					kg/s
Suction Pressure:	1					bar-abs
Suction Temperature:	1					deg C
Discharge Pressure:	1					bar-abs

} 1804

modify

1805

1806

1807

1808

Fig 18



1900

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Nuovo Pignone - Upstream

Configuration, Verification  
Navigator

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List of Constituent List of Processes New Configuration Boxed RF&Q Issues Update

1901

### List of Verifications

Project Name: TEST1  
RFC&Q Name: gra

1902

Verification Name	Date
verification	02.01.2001
verification	

1903

open rename delete

1905 1906 1907

- 1 New Verification 1908
- 1 View RFC&Q Summary Page 1910
- 1 RFQ (All Existing Verification Will Be Included in the RFQ) 1909

Back

1904

Fig 19



2000

~2001

### New Verification

Project Name: TEST1  
 RFC&Q Name: gra

#### Plant General data

Unit System: SI   Compression Service: Not Specified

2002

#### Environment Conditions

Environmental Design Pressure: Asl 0 m

Design Temperature\* 0 deg C   Relative Humidity\* 0 %

2003

#### Driver Specifications

Driver Type: Optimized   Model: Optimized

##### Gas Turbine Data

Fuel Type: Process Gas   Electrical Frequency: 50 cps  
 Fuel Mole Weight: 1/mole  
 Fuel Low Heat Value: 1500 kJ/kg

☒ Fuel Gas

2004

Compressor Speed: rpm

2005

2006

Back

Fig 20



## New RFC&Q

Project Name: TEST1  
RFC&Q Name: gra

### Compression Data

Gas State Equation: Optimized

Nace Application: Not

Stage Number: Optimized

	Optimized	1st	2nd	3rd	4th	
Handled Flow: Mass Flow	1		35			kg/s
Suction Pressure *	1		60			bar-abs
Suction Temperature *	1		55			deg C
Discharge Pressure *	1		100			bar-abs

Process Gas \*

All Stages

Max Temperature: 170 deg C

### Compressor Options

Casing Type

Horizontally Split: Not

Back-To-Back: Yes

Double Flow: Not

Max Peripheral Speed of Impellers: 280 m/s

### Interstage Data

Gas Cooler Discharge Temperature\* 55 deg C

Max Stage Suction Temperature 120 deg C

Interstage Pressure Drop

Between 1° & 2° Stages	2.5	%
Between 2° & 3° Stages	2.5	%
Between 3° & 4° Stages	2.5	%

FIG 21

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2200

~2201

### Verification Summary Data

Project Title: TEST1  
RFC&Q Name: gra

} 2202

#### General Data

Compression Service	Not Specified
Driver Type:	Optimized
Driver Model:	OGT
Direct Coupling:	Not

2203

#### Compression Data

Description	Optimized	Stage 1	Stage 2	Stage 3	Stage 4	
Handled Flow: Mass Flow	1		35			kg/s
Suction Pressure:	1		60			bar-abs
Suction Temperature:	1		55			deg C
Discharge Pressure:	1		100			bar-abs

2204

save

modify

View RFC&Q Summary Page

2205  
220 - 2207

Fig 22





2300

2301

## New Layout

### Project Data

Project Name

Configuration

2302

### Driver Specifications

Driver

Gearbox

2303

### Compressor Casings

	Type	Impeller	Rating
Compressor Casing 1	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compressor Casing 2	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compressor Casing 3	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

2304

design

2305

Fig 23



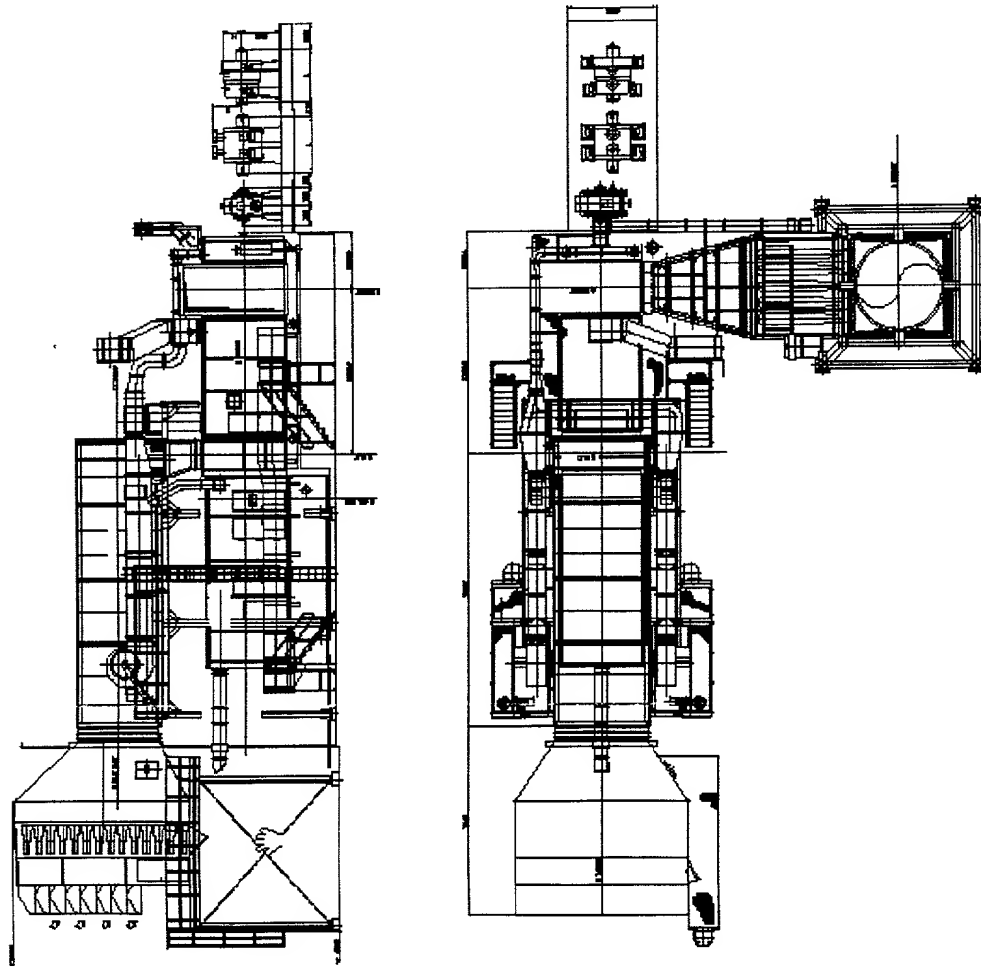


FIG. 24



## Compressor Checklist

Final User : \_\_\_\_\_  
 Country:  State:   
 Number of Trains to be quoted (each handling 100% of the flow indicated in datasheets)   
 Unit Location   
 Date Required for Response \_\_\_\_\_

### 1. Delivery (According to Incoterms 1990)

☒ Ex-Works    ☐ F.O.A.  
☐ F.A.S.    ☐ F.O.B.    Port of Shipment: \_\_\_\_\_  
☐ C&F    ☐ C.I.F.    Port of Destination: \_\_\_\_\_  
☐ D.D.U.    Place of Shipment: \_\_\_\_\_

### 2. Type of Installation

### 3. Forecasted year of installation \_\_\_\_\_

### 4. Compression Train Baseplate

☒ Multipoint Baseplate    ☐ Three-Points Single Lift Baseplate

### 5. Gas Turbine Combustion System

☒ STD Combustor    ☐ DLE  
☐ Water Injection    ☐ Steam Injection

### 6. Turbine Inlet System

☒ Included    ☐ Not Included

### 7. Turbine Exhaust System

☒ Included    ☐ Not Included

### 8. Battery & Battery Charger System

☐ Included    ☒ Not Included

### 9. Compressor Seals

☒ Dry Gas    ☐ Oil

### 10. Antisurge Controls, Instrumentation & Valves

☐ Included    ☒ Not Included

### 11. Test

☐ Full Load/Speed/Pressure String Test    ☐ ASME PTC10 Class 1 String Test  
☐ ASME PTC10 Class 3 Performance Test for Compressor    ☐ No Load/Full Speed/Pressure String Test  
☐ STD Gas Turbine No Load Mechanical Running Test

### 12. Date Required for Response (mm.dd.yyyy)

\_\_\_\_\_



Back

FIG. 25



## Electric Motor Checklist

Final User : \_\_\_\_\_  
 Country:  State:   
 Number of Trains to be quoted (each handling 100% of the flow indicated in datasheets)   
 Unit Location   
 Date Required for Response \_\_\_\_\_

### 1. Delivery (According to Incoterms 1990)

☒ Ex-Works   ☐ F.C.A.  
☐ F.A.S.   ☐ F.O.B.   Port of Shipment: \_\_\_\_\_  
☐ C&F   ☐ C.I.F.   Port of Destination: \_\_\_\_\_  
☐ D.D.U.   Place of Shipment: \_\_\_\_\_

### 2. Type of Installation

### 3. Forecasted year of installation \_\_\_\_\_

### 4. Compression Train Baseplate

☒ Separate Multipoint Baseplate for Driver and Compressor   ☐ Common Multipoints Baseplate

### 5. Gas Turbine Combustion System

☒ STD Combustor   ☐ DLE  
☐ Water Injection   ☐ Steam Injection

### 6. Turbine Inlet System

☒ Included   ☐ Not Included

### 7. Turbine Exhaust System

☒ Included   ☐ Not Included

### 8. Battery & Battery Charger System

☒ Included   ☐ Not Included

### 9. Compressor Seals

☒ Dry Gas   ☐ Oil

### 10. Antisurge Controls, Instrumentation & Valves

☒ Included   ☐ Not Included

### 11. Test

☒ Full Load/Speed/Pressure String Test   ☐ ASME PTC10 Class 1 String Test  
☐ ASME PTC10 Class 3 Performance Test for Compressor   ☐ No Load/Full Speed/Pressure String Test  
☐ STD Gas Turbine No Load Mechanical Running Test

### 12. Date Required for Response (mm.dd.yyyy)

\_\_\_\_\_



FIG. 26



## Turbocompressor Checklist

Final User : \_\_\_\_\_  
 Country:  State:   
 Number of Trains to be quoted (each handling 100% of the flow indicated in datasheets)   
 Unit Location   
 Date Required for Response \_\_\_\_\_

### 1. Delivery (According to Incoterms 1990)

☒ Ex-Works ☐ F.C.A.  
☐ F.A.S. ☐ F.O.B.  
☐ C&F ☐ C.I.F.  
☐ D.D.U.

Port of Shipment: \_\_\_\_\_  
 Port of Destination: \_\_\_\_\_  
 Place of Shipment: \_\_\_\_\_

### 2. Type of Installation

### 3. Forecasted year of installation \_\_\_\_\_

### 4. Compression Train Baseplate

☒ Separate Multipoint Baseplate for Driver and Compressor ☐ Common Multipoints Baseplate

### 5. Gas Turbine Combustion System

☒ STD Combustor ☐ DLE  
☐ Water Injection ☐ Steam Injection

### 6. Turbine Inlet System

☒ Included ☐ Not Included

### 7. Turbine Exhaust System

☒ Included ☐ Not Included

### 8. Battery & Battery Charger System

☐ Included ☒ Not Included

### 9. Compressor Seals

☒ Dry Gas ☐ Oil

### 10. Antisurge Controls, Instrumentation & Valves

☐ Included ☒ Not Included

### 11. Test

☐ Full Load/Speed/Pressure String Test ☐ ASME PTC10 Class 1 String Test  
☐ ASME PTC10 Class 3 Performance Test for Compressor ☐ No Load/Full Speed/Pressure String Test  
☐ STD Gas Turbine No Load Mechanical Running Test

### 12. Date Required for Response (mm.dd.yyyy)

\_\_\_\_\_



Send RFQ

Project Title: TEST1  
RFC&Q Name: gra

2802

To: danielle.badiani@np.ge.com  
Subject:  
From Address: stefano.lanfredi@np.ge.com  
From Name: Stefano Lanfredi  
Message:

2803

View CHK

View DSH

2805

2804

View RFC

View RFC&Q Results

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Fig 28



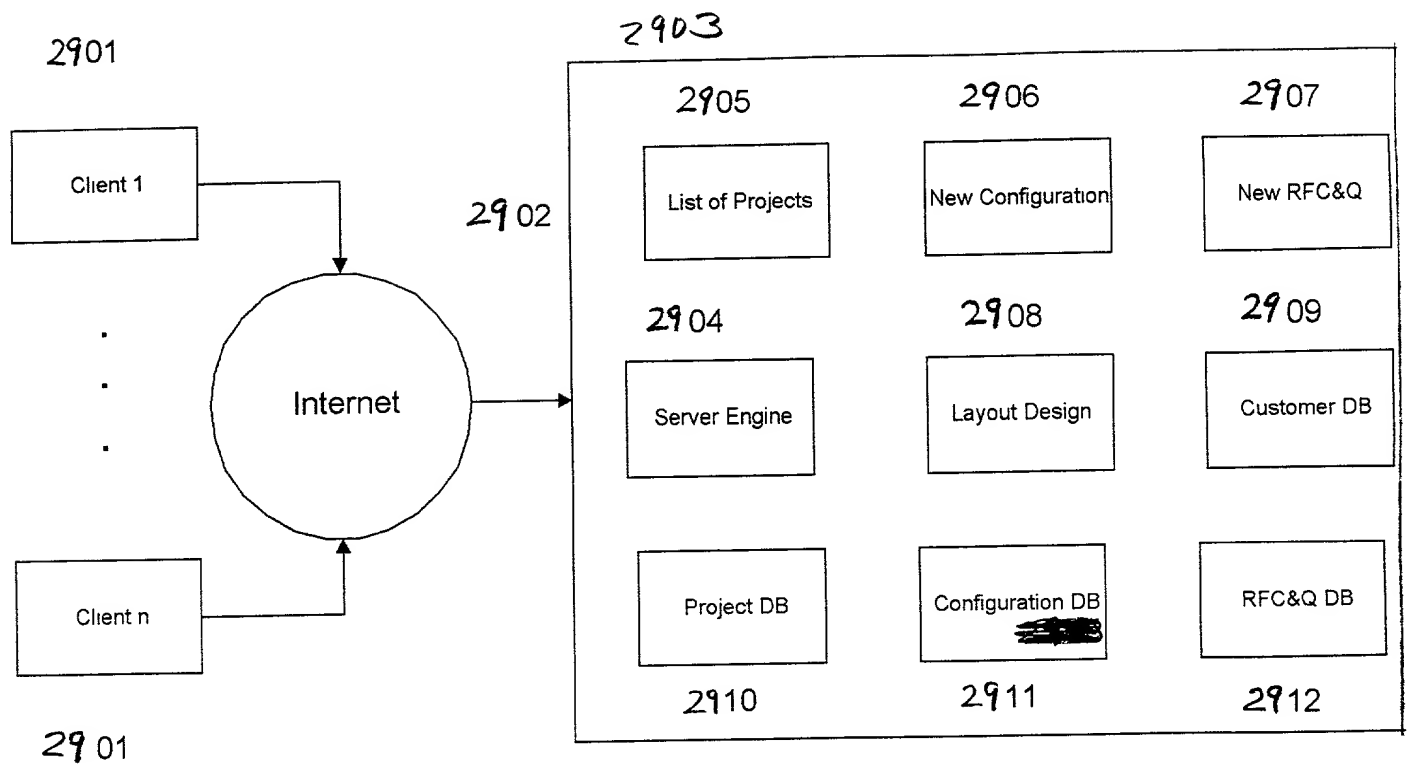
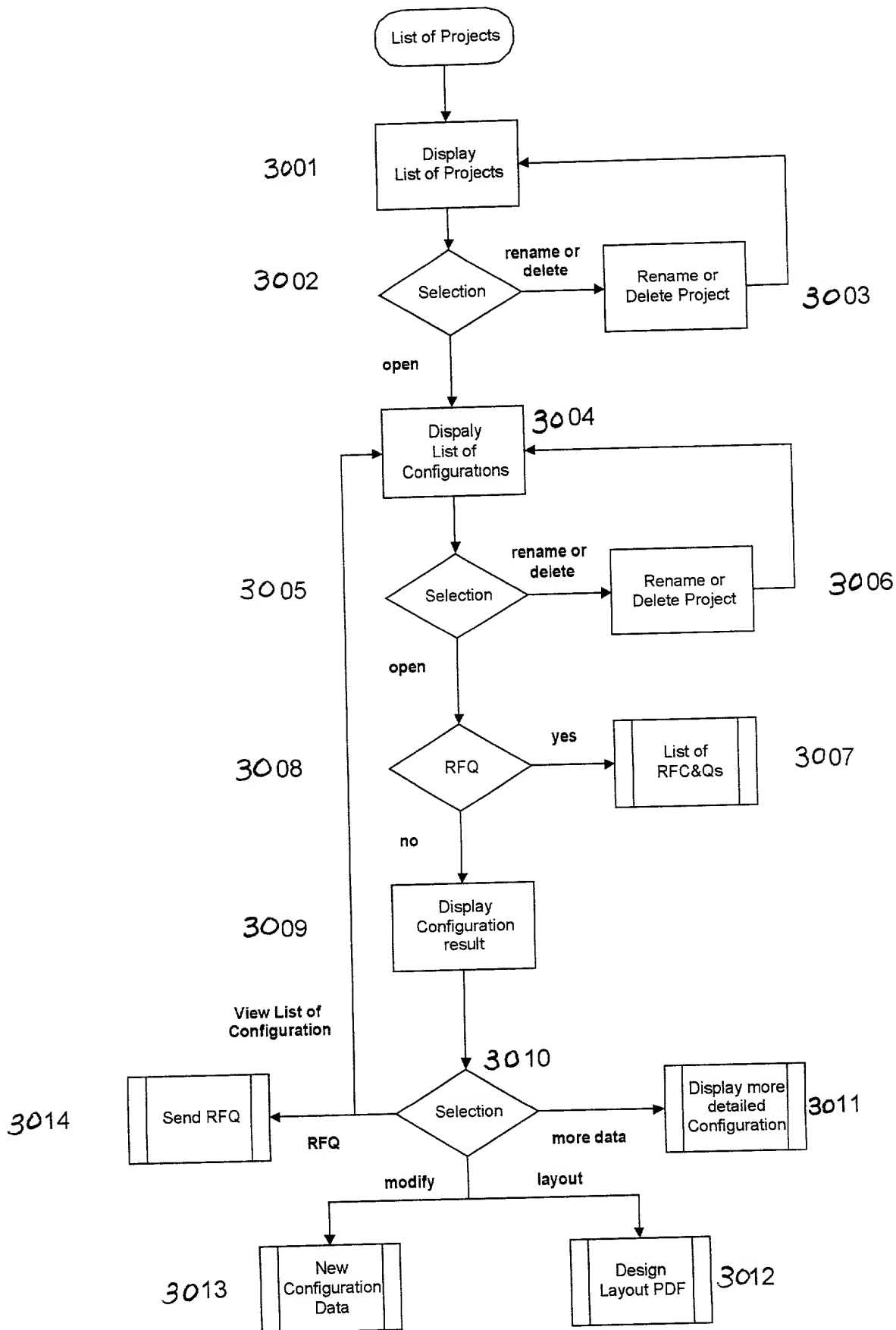


Fig 29





**Fig 30**



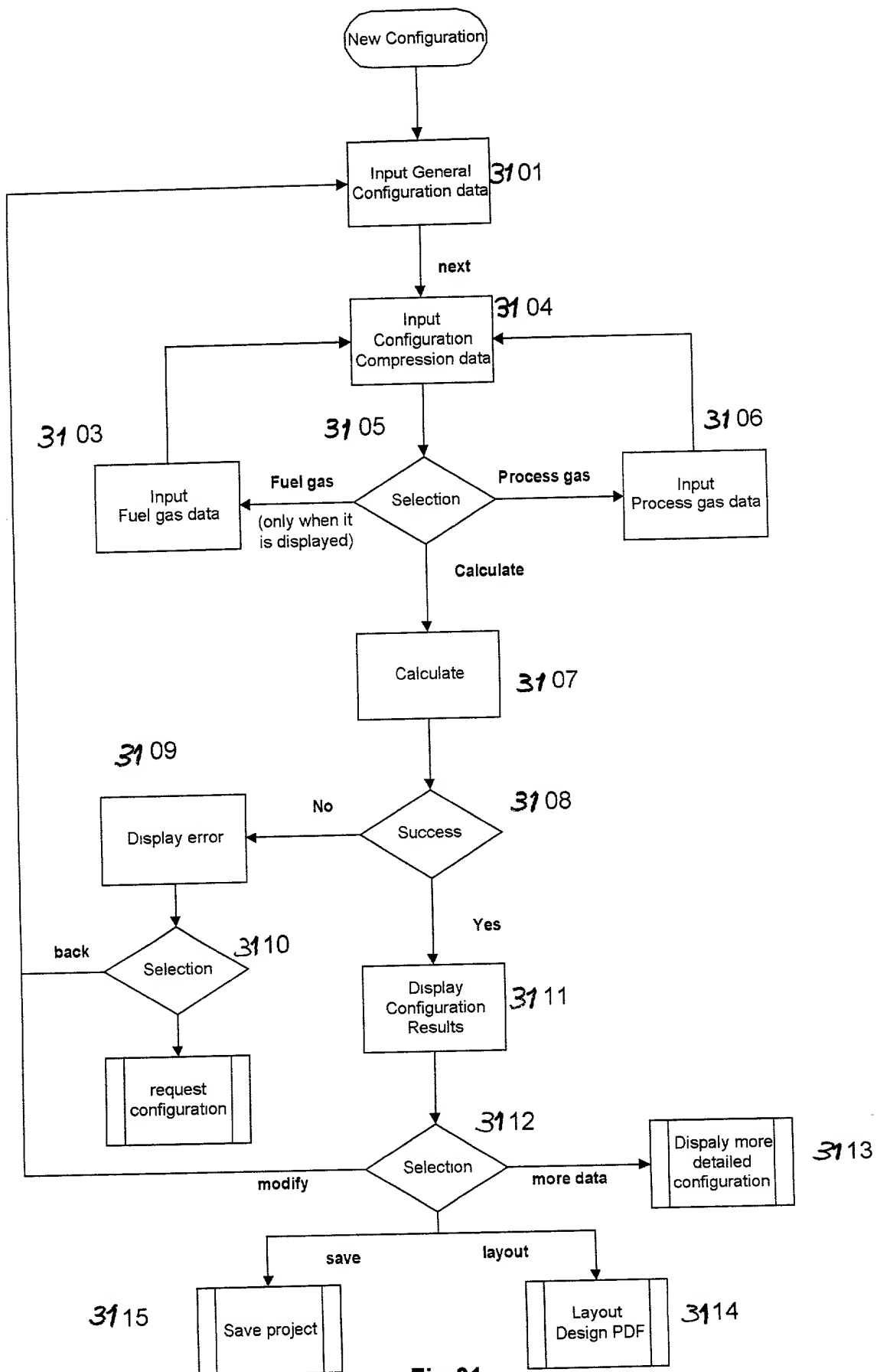


Fig 31



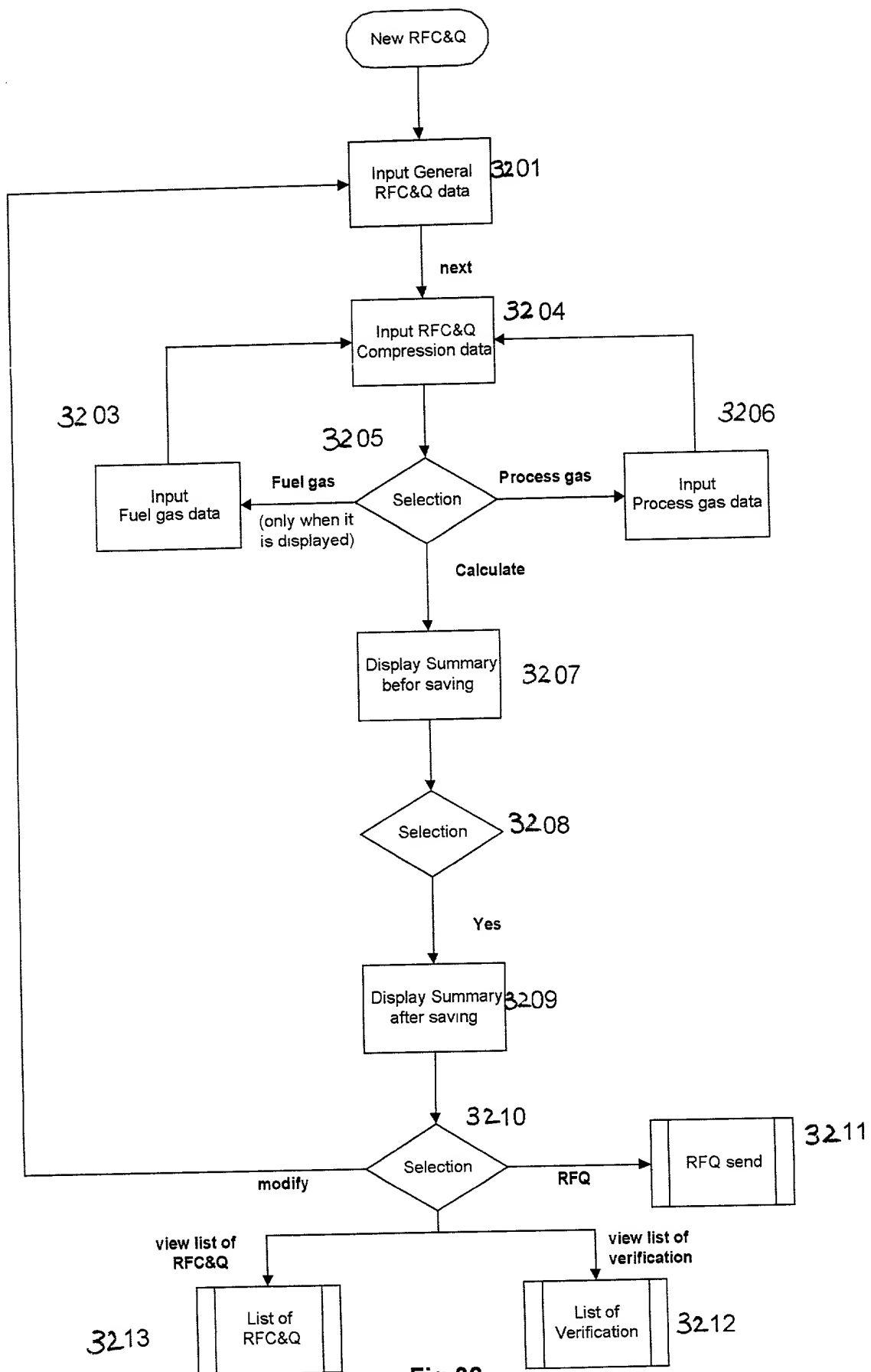
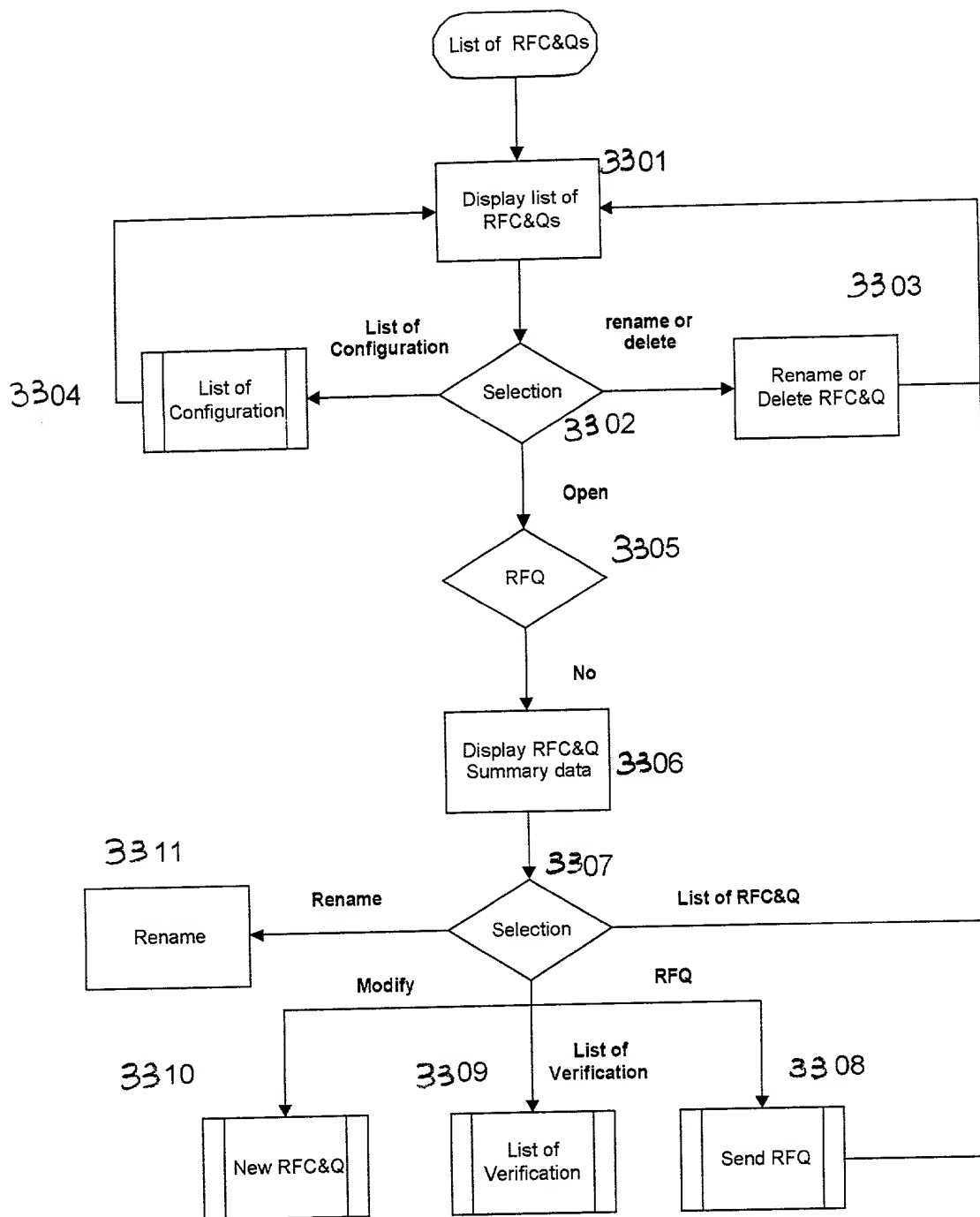


Fig 32





**Fig 33**



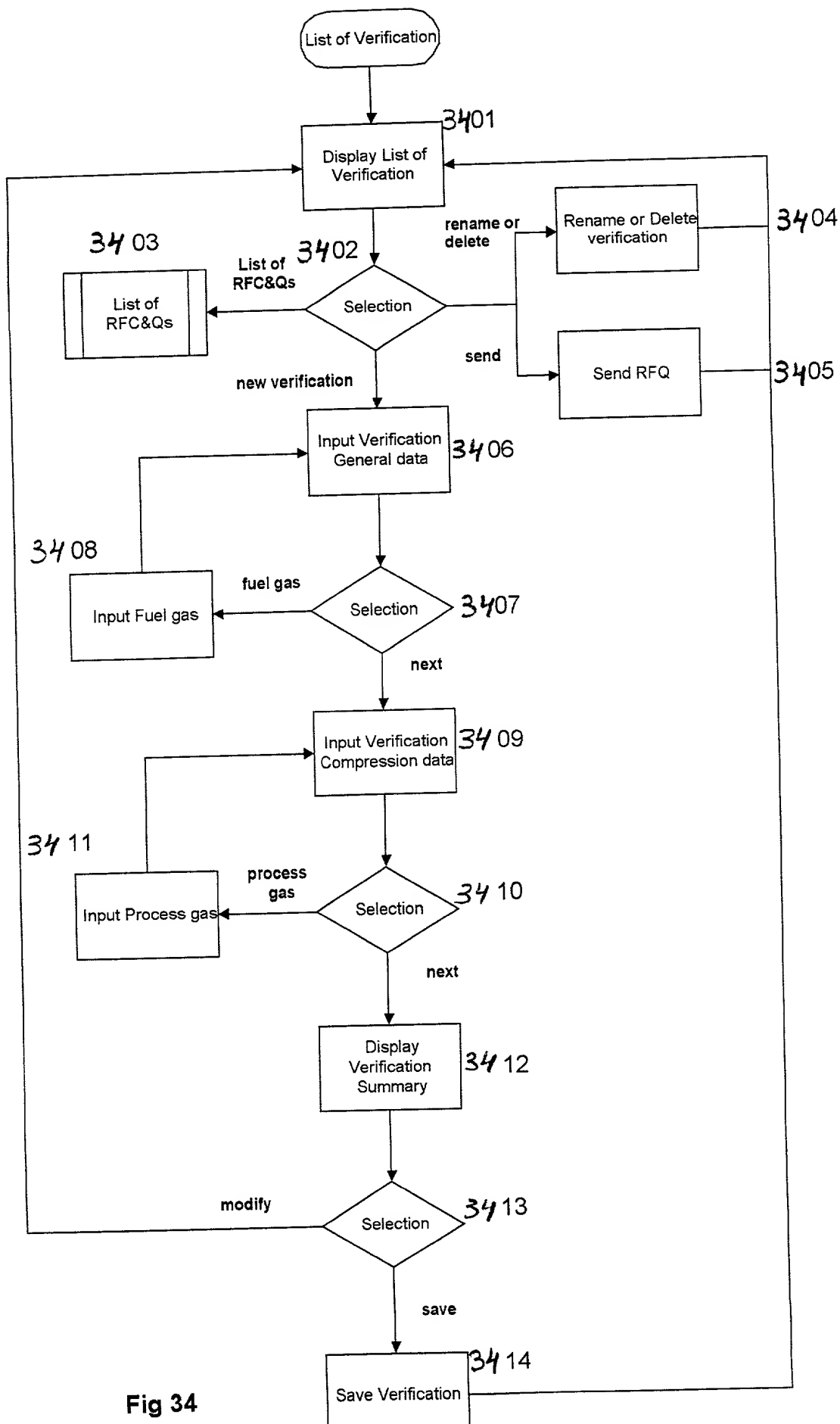
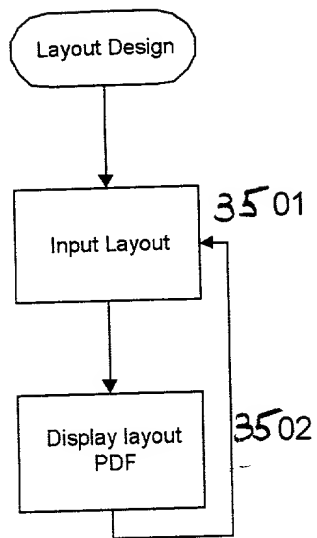


Fig 34





**Fig 35**